Code No: 155CK **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, August/September - 2024
NATURAL LANGUAGE PROCESSING
(Common to CSE, CSD)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a) Define Finite state morphology. [2]
b) State how dictionary lookup works for morphological modeling. [3]
c) Classify different approaches for parsing. [2]
d) Write the key differences between discriminative and generate models for parsing. [3]
e) Differentiate between homonymy and polysemy. [2]
f) Write the sentences which lead to word sense disambiguation with the word ***"bank"***. [3]
g) Define conceptual density. [2]
h) List the software tools available for semantic role labeling. [3]
i) Define smoothing. [2]
j) Define the terms vocabulary and Out-Of-Vocabulary (OOV). [3]

PART – B

(50 Marks)

2.a) Elaborate on the issues and challenges of morphological parsing.
b) Discuss morphological induction. [6+4]

OR

3.a) Elaborate on the models for ambiguity resolution in Parsing.
b) Distinguish between generative and discriminative classification approaches with suitable methods. [4+6]

4.a) Discuss how probabilistic grammars help in resolving the ambiguity in parsing with a suitable example
b) Define dependency parsing. Give an example of a Dependency graph with the input sentence. [5+5]

OR

5. Illustrate the mechanism of Shift Reduced Parsing with a neat sketch and a suitable example. [10]

6.a) Illustrate how the different features in combination with modeling approaches, are used for semantic analysis.

b) Classify the different approaches for meaning representation. [6+4]

OR

7.a) Differentiate between supervised and unsupervised learning algorithms. List the supervised and unsupervised approaches experimented with for semantic parsing.

b) What is semantic interpretation? What are the approaches generally used for semantic interpretation? [5+5]

8.a) Illustrate Predicate-argument structure with a suitable example.

b) List out the applications of FrameNet, [6+4]

OR

9.a) Compare PropBank and FrameNet.

b) Explain Semantic Role Labeling with a suitable algorithm. [5+5]

10.a) Define language modeling, explain n-gram language modeling approach.

b) Explain the evaluation methods for language models. [6+4]

OR

11.a) Discuss about Language Model Adaption.

b) Write note on cross lingual Language Modeling. [6+4]

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